Total
Asset
Visibility

AIR 6.8.3 - Promoting UID within the NAE

Implementing IUID

"It's not as hard as you might think"

Presented at Pt. Mugu
14 February 2008

NAVAIR

Today's Agenda

… how to get started

- An honest NAVAIR perspective.
- A practical guide to implementing UID.
- What's going on with UID around NAVAIR.
- Parting thoughts.

… is not equal to th

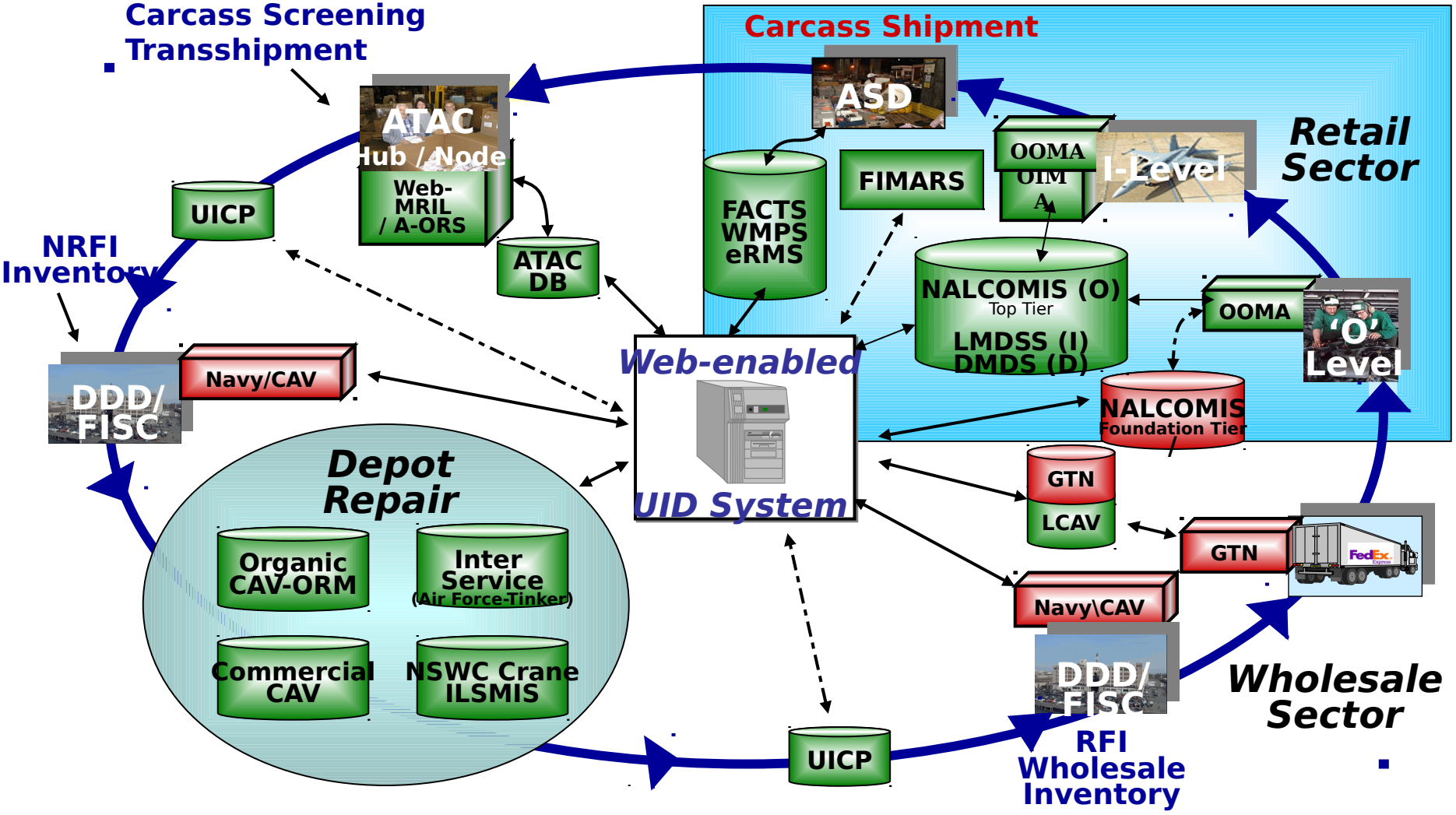
…

"Thoughts on why we're doing UID, how to do it and what we're doing."

This is What the Boss Would Show You

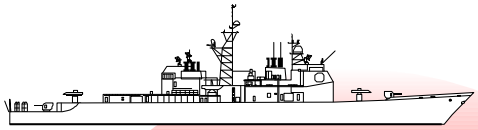
... enterprise focus

Information Systems

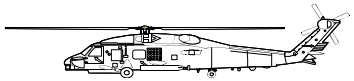


Or, it Might be This …

… inter-related processes everywhere



Embedded Sensors



Integrated Data Bus

Maintenance

On-Board Diagnostics and Prognostics

Anticipatory Materiel

Reduced Footprints

Maintenance

Interactive Training & Tech Support

IETMs

Pedigree Manage-ment

CBM+

Predictive Maintenance

Troubleshooting and Repair

Preventive Maintenance

RCM Data Analysis

Condition Monitoring

Reliability Analysis

Integrated Logistics Information

Portable Maintenance Aids

UID/SIM

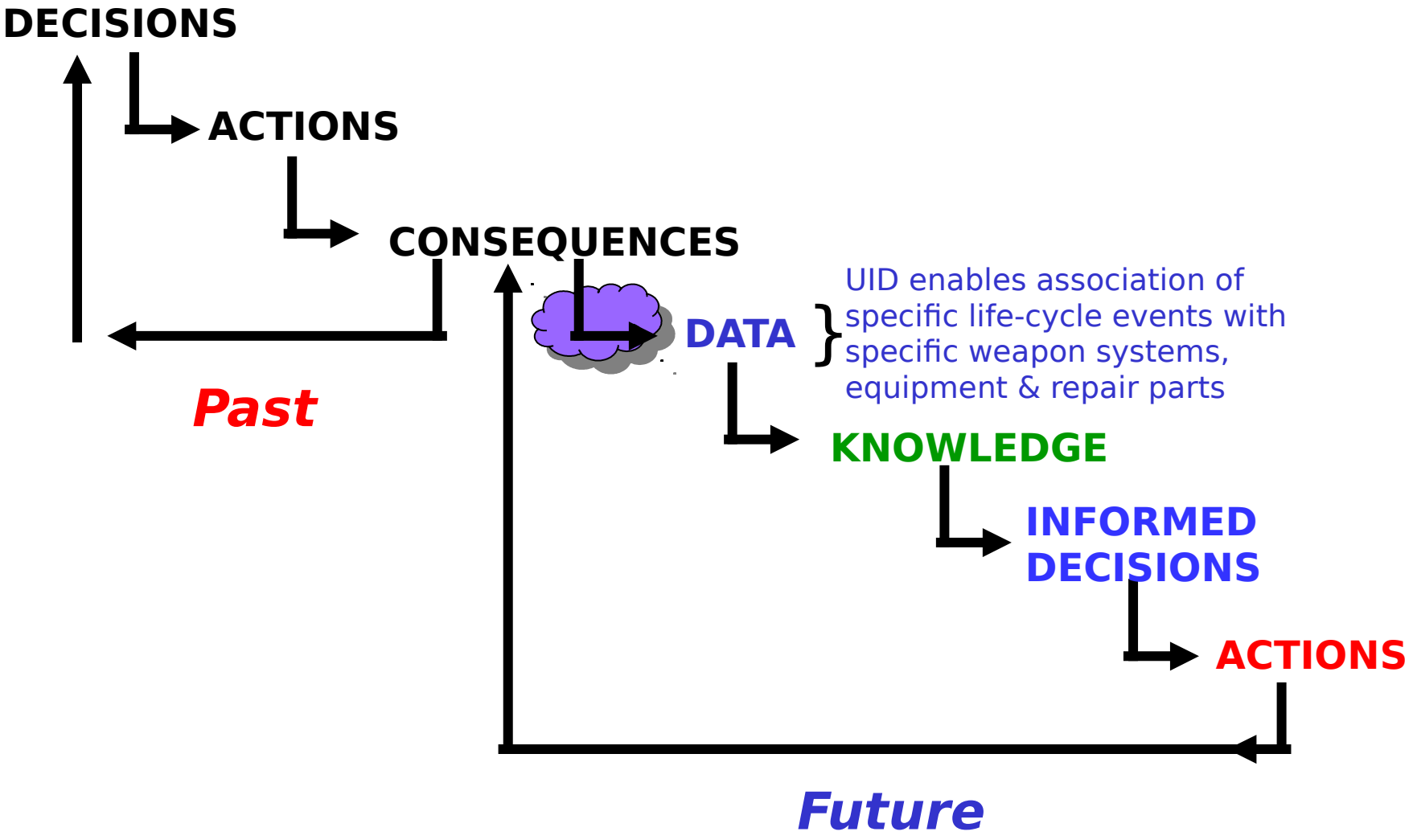
Maintenance History Configuration Control

Battlespace Network

Linked to Warfighters

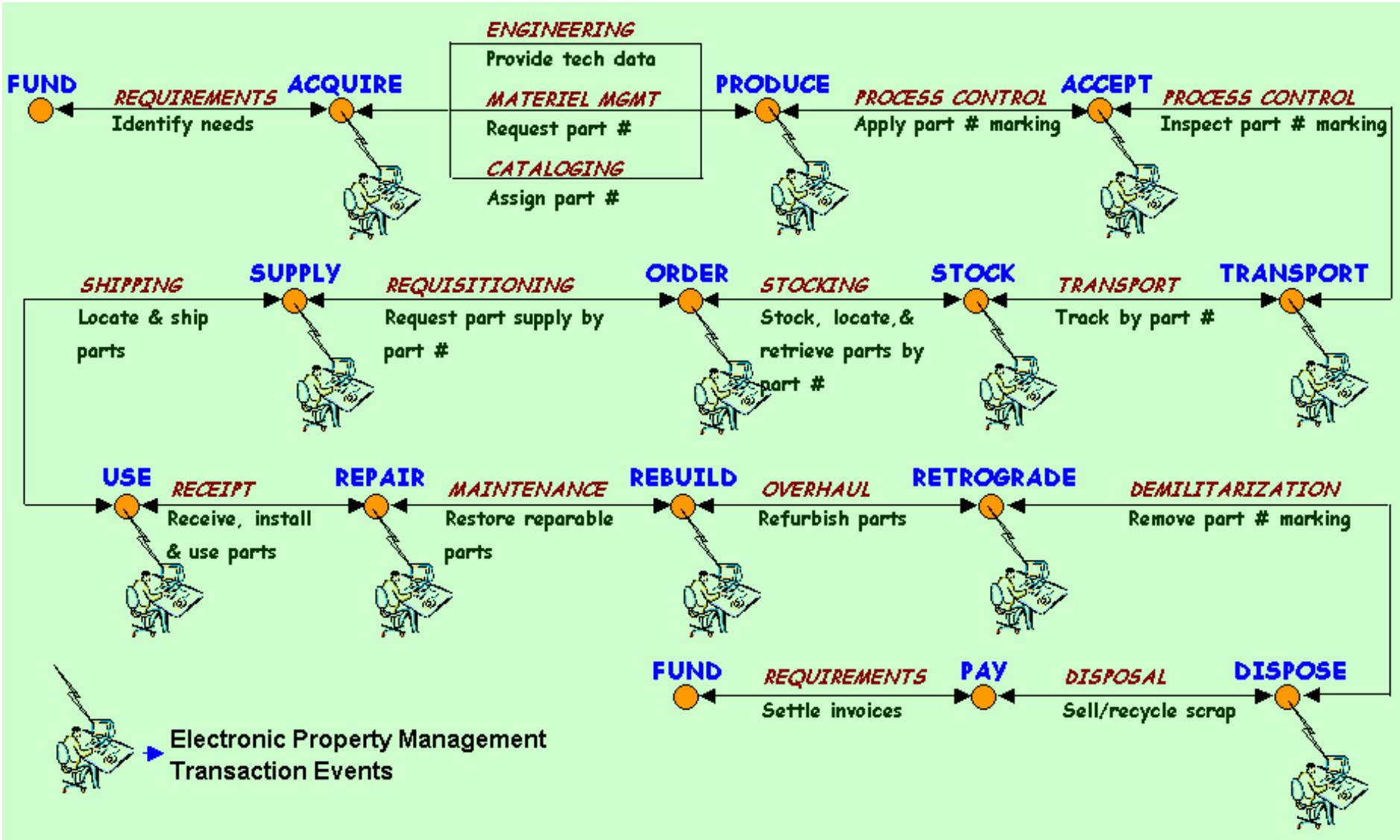
Here's my take on it!

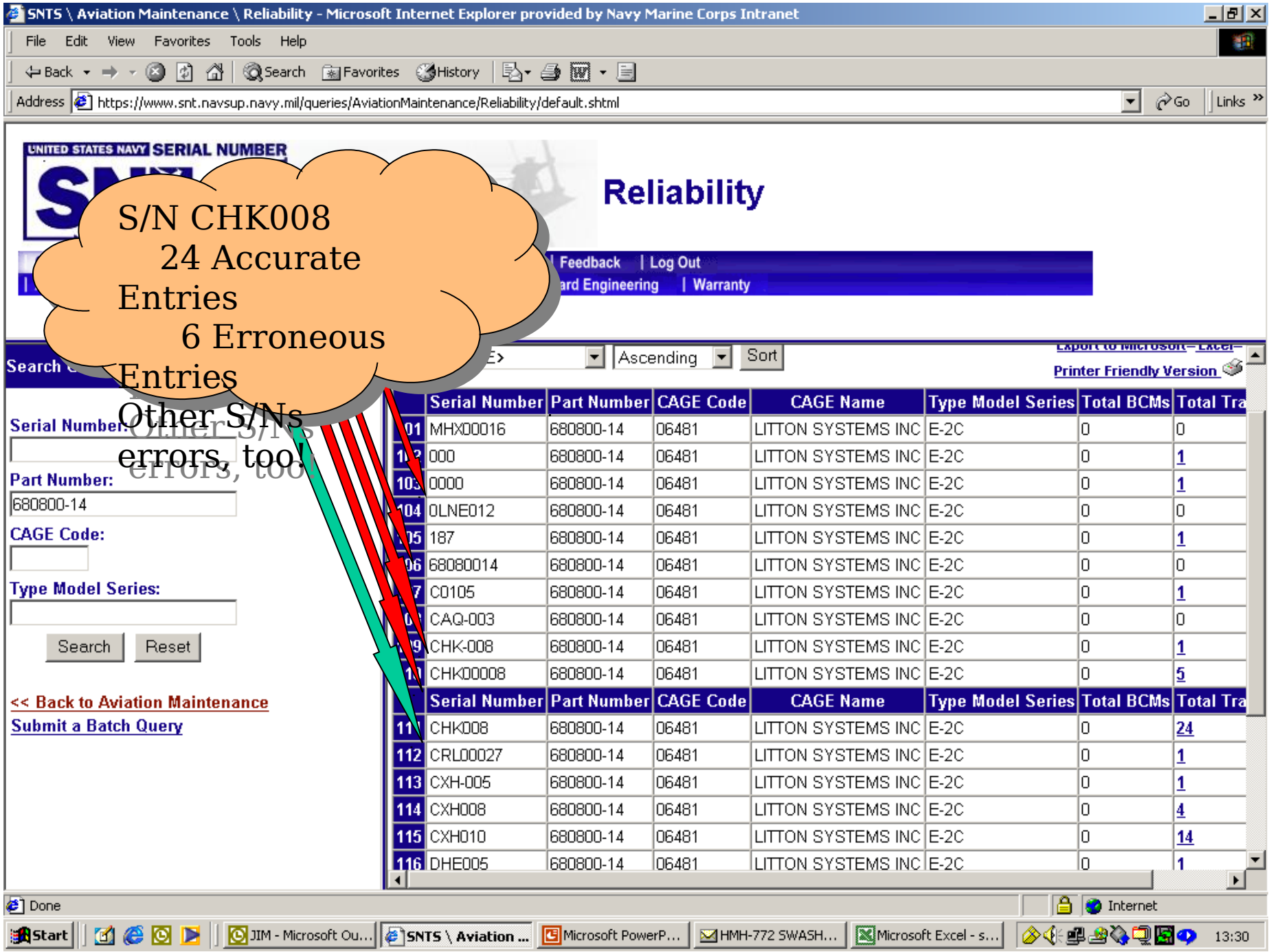
... informed decision making



Can You Make Good Decisions?

... using our AIS data




SNTS \ Aviation Maintenance \ Reliability - Microsoft Internet Explorer provided by Navy Marine Corps Intranet
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Address https://www.snt.navsup.navy.mil/queries/AviationMaintenance/Reliability/default.shtml
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S/N CHK008
24 Accurate Entries
6 Erroneous Entries
Other S/Ns errors, too!
Search
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Printer Friendly Version
Serial Number:
Part Number:
680800-14
CAGE Code:
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Submit a Batch Query
Serial Number | Part Number | CAGE Code | CAGE Name | Type Model Series | Total BCMs | Total Tra
101 MHX00016 680800-14 06481 LITTON SYSTEMS INC E-2C 0 0
102 000 680800-14 06481 LITTON SYSTEMS INC E-2C 0 1
103 0000 680800-14 06481 LITTON SYSTEMS INC E-2C 0 1
104 0LNE012 680800-14 06481 LITTON SYSTEMS INC E-2C 0 0
105 187 680800-14 06481 LITTON SYSTEMS INC E-2C 0 1
106 68080014 680800-14 06481 LITTON SYSTEMS INC E-2C 0 0
107 C0105 680800-14 06481 LITTON SYSTEMS INC E-2C 0 1
108 CAQ-003 680800-14 06481 LITTON SYSTEMS INC E-2C 0 0
109 CHK-008 680800-14 06481 LITTON SYSTEMS INC E-2C 0 1
110 CHK00008 680800-14 06481 LITTON SYSTEMS INC E-2C 0 5
Serial Number | Part Number | CAGE Code | CAGE Name | Type Model Series | Total BCMs | Total Tra
111 CHK008 680800-14 06481 LITTON SYSTEMS INC E-2C 0 24
112 CRL00027 680800-14 06481 LITTON SYSTEMS INC E-2C 0 1
113 CXH-005 680800-14 06481 LITTON SYSTEMS INC E-2C 0 1
114 CXH008 680800-14 06481 LITTON SYSTEMS INC E-2C 0 4
115 CXH010 680800-14 06481 LITTON SYSTEMS INC E-2C 0 14
116 DHE005 680800-14 06481 LITTON SYSTEMS INC E-2C 0 1
Done
Internet
Start
JIM - Microsoft Ou...
SNTS \ Aviation ...
Microsoft PowerP...
HMH-772 SWASH...
Microsoft Excel - s...
13:30

Two-Aspects of Marking

… large up-front effort

New

- Much easier.
- Onus is on the contractor or supplier to mark and register.
- Costs are somewhat mitigated.
- You need to clearly state your requirements.
  - SOW
  - Clauses

Legacy

- Lots of it out there.
- It’s your responsibility to mark and register.
- Labor intensive.
- Multiple decisions.
  - What to mark
  - How to mark

“… and that’s before we ever talk about the process.”

New Acquisition Marking

… fairly straight-forward

- Always include the UID clause and MIL-STD-130 in your contacts.
- Tailor those documents; they're not just contract boilerplate. Expand on your UID requirements in the SOW.
  - Guidance regarding embedded items
  - Elements within the barcode
  - Expected documentation or verification
  - Types and location of marks
  - First article test
  - Whatever else makes sense …

Legacy Marking

… many decisions and options

- Waiting won’t make the requirement disappear.
- Develop a strategy and effect a plan that makes business sense and is:
  - Executable
  - Affordable
  - Manageable
- Collaborate, collaborate, collaborate with your:
  - AIS providers
  - “I” and “D”-level maintenance organizations
  - Operational user community

Tomorrow's Payback, Today

... you can start now

UID Dilemma

- Gotta do it!
- Unfunded mandate!
- AISs aren't ready!
- Too hard to do!
- Benefits the future!

NAVAIR's Approach

- Leverage on the "other" data within the data matrix barcode.
- Use your existing AIS.
- Read MRI today!
- Posture for using the UID later.
- Leverage on N-ERP for UID-enablement.

As Simple as 1, 2, 3, 4

... a methodical, high-level approach

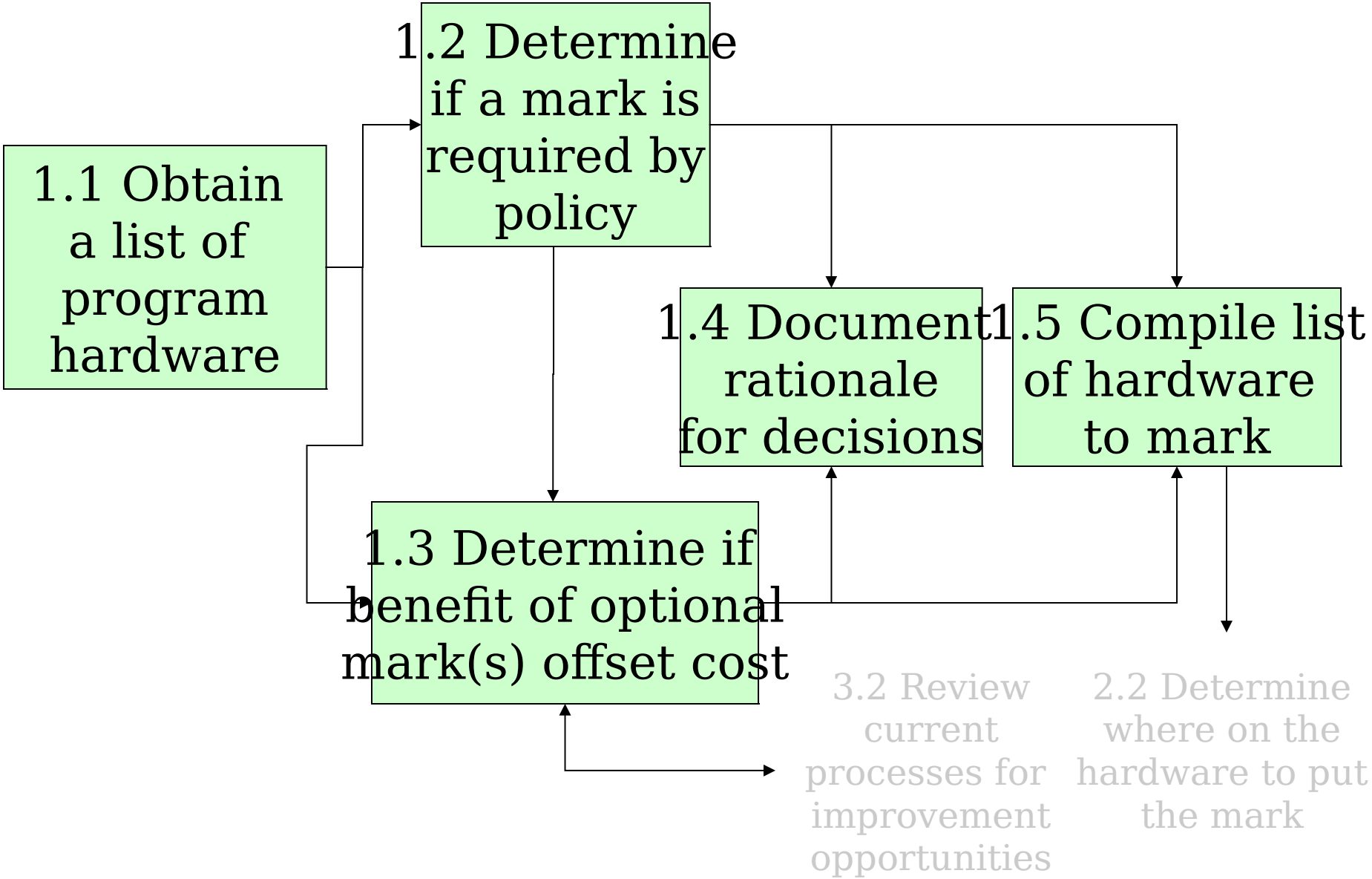
Step One -What to Mark

Step Two - How to Mark

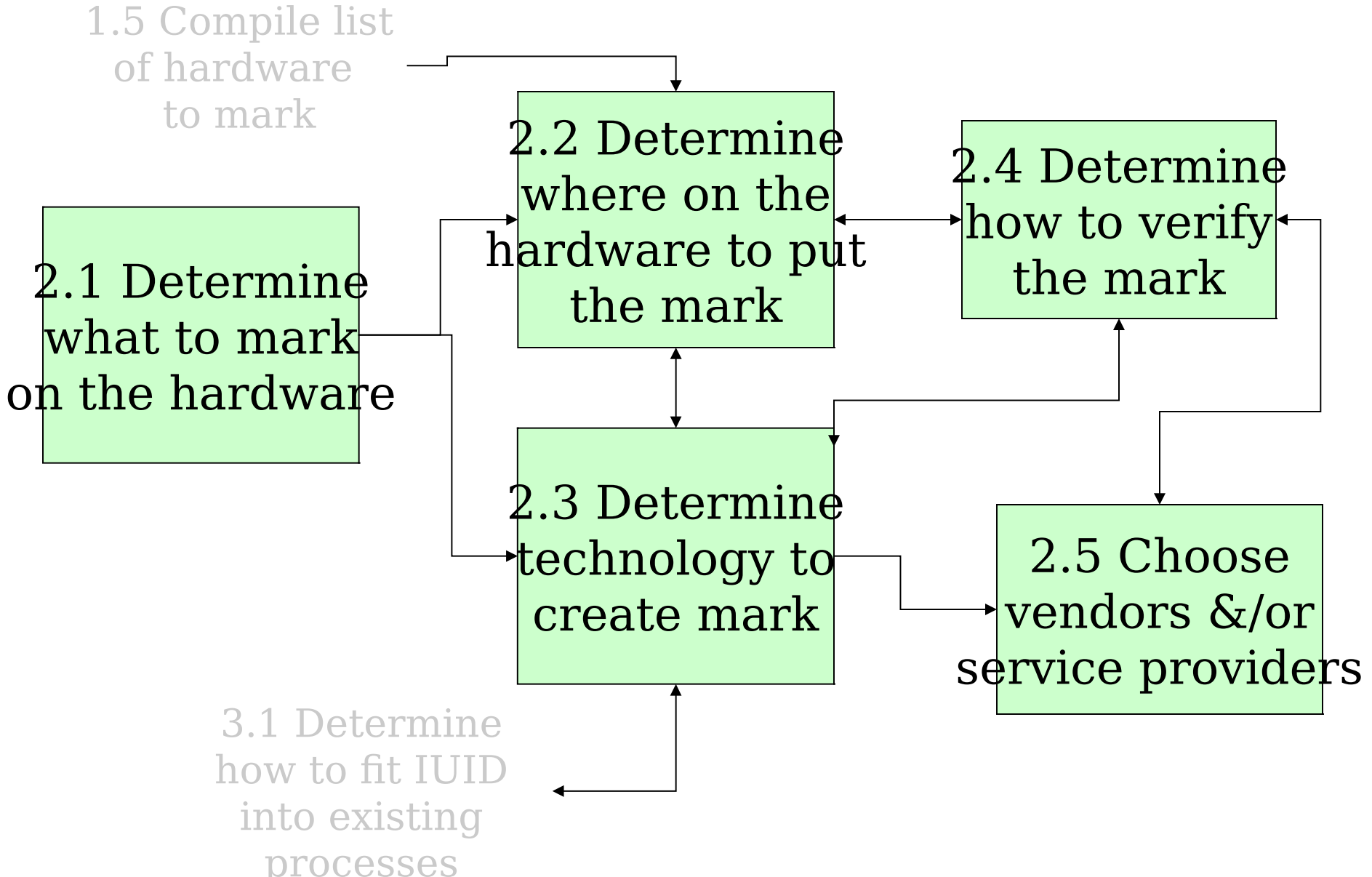
Step Three - Capturing the *Data*

Step Four - Sharing the Data

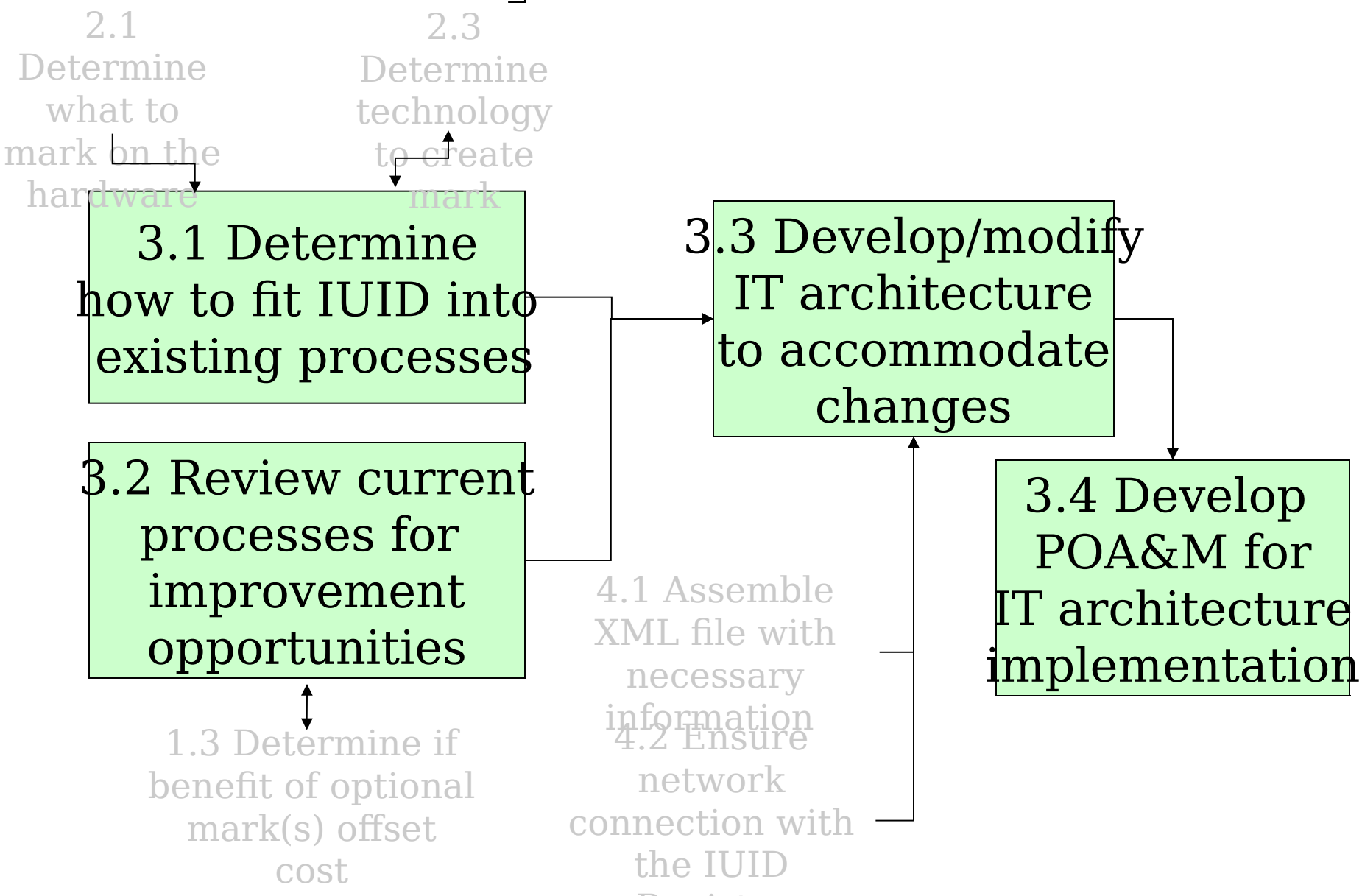
Step One – Figure Out What to Mark


1.2 Determine if a mark is required by policy
1.1 Obtain a list of program hardware
1.4 Document rationale for decisions
1.5 Compile list of hardware to mark
1.3 Determine if benefit of optional mark(s) offset cost
3.2 Review current processes for improvement opportunities
2.2 Determine where on the hardware to put the mark

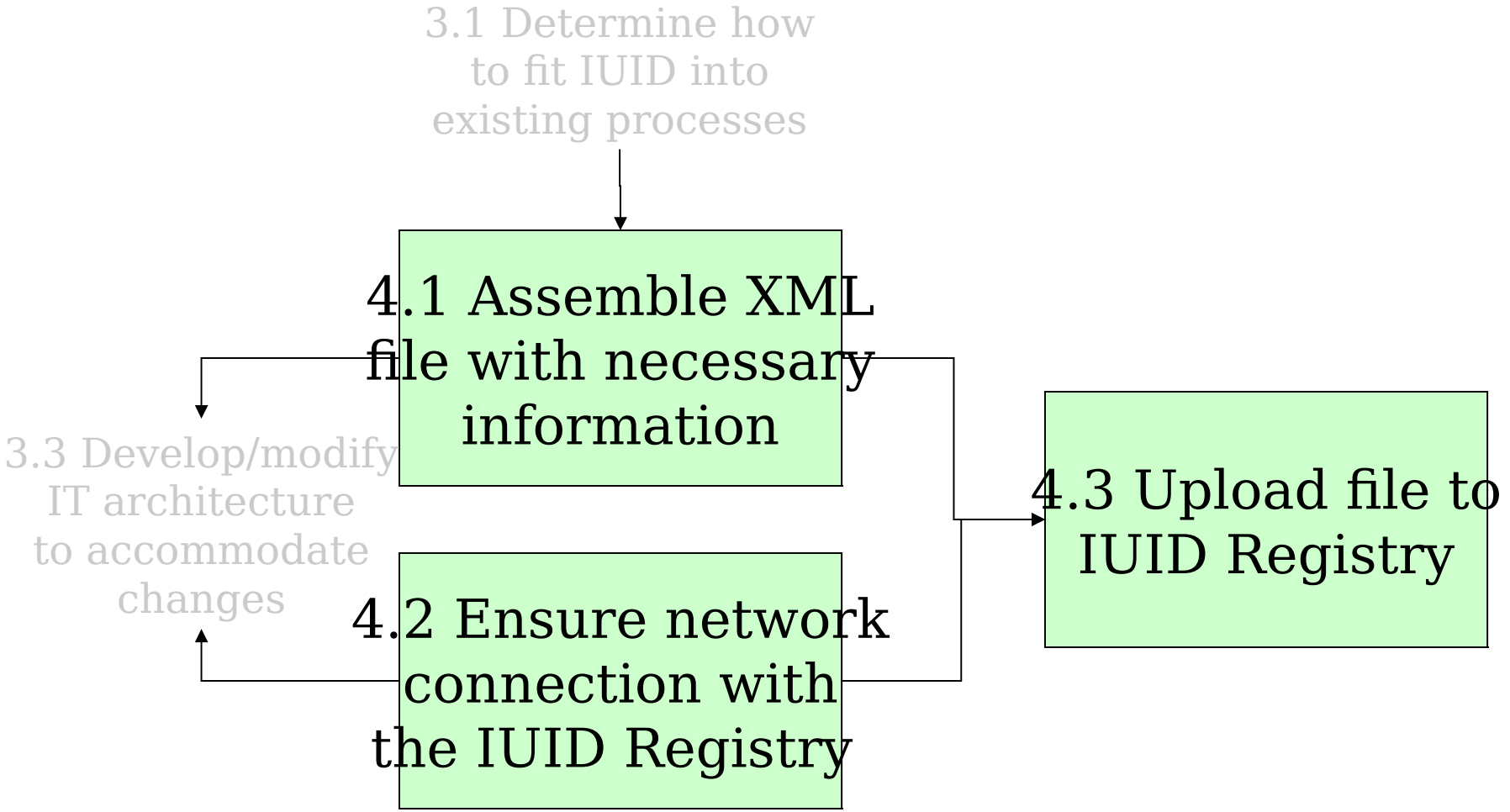
Step Two – Figure Out How to Mark


1.5 Compile list of hardware to mark
2.2 Determine where on the hardware to put the mark
2.4 Determine how to verify the mark
2.1 Determine what to mark on the hardware
2.3 Determine technology to create mark
2.5 Choose vendors &/or service providers
3.1 Determine how to fit IUID into existing processes

Step Three – Figure Out How to Capture the *Data*


2.1 Determine what to mark on the hardware
2.3 Determine technology to create mark
3.1 Determine how to fit IUID into existing processes
3.2 Review current processes for improvement opportunities
3.3 Develop/modify IT architecture to accommodate changes
3.4 Develop POA&M for IT architecture implementation
1.3 Determine if benefit of optional mark(s) offset cost
4.1 Assemble XML file with necessary information
4.2 Ensure network connection with the IUID

Step Four – Figure Out How to Share the *Data*


3.1 Determine how to fit IUID into existing processes
4.1 Assemble XML file with necessary information
3.3 Develop/modify IT architecture to accommodate changes
4.2 Ensure network connection with the IUID Registry
4.3 Upload file to IUID Registry

Now, for a Deeper Dive

... dissecting simplicity

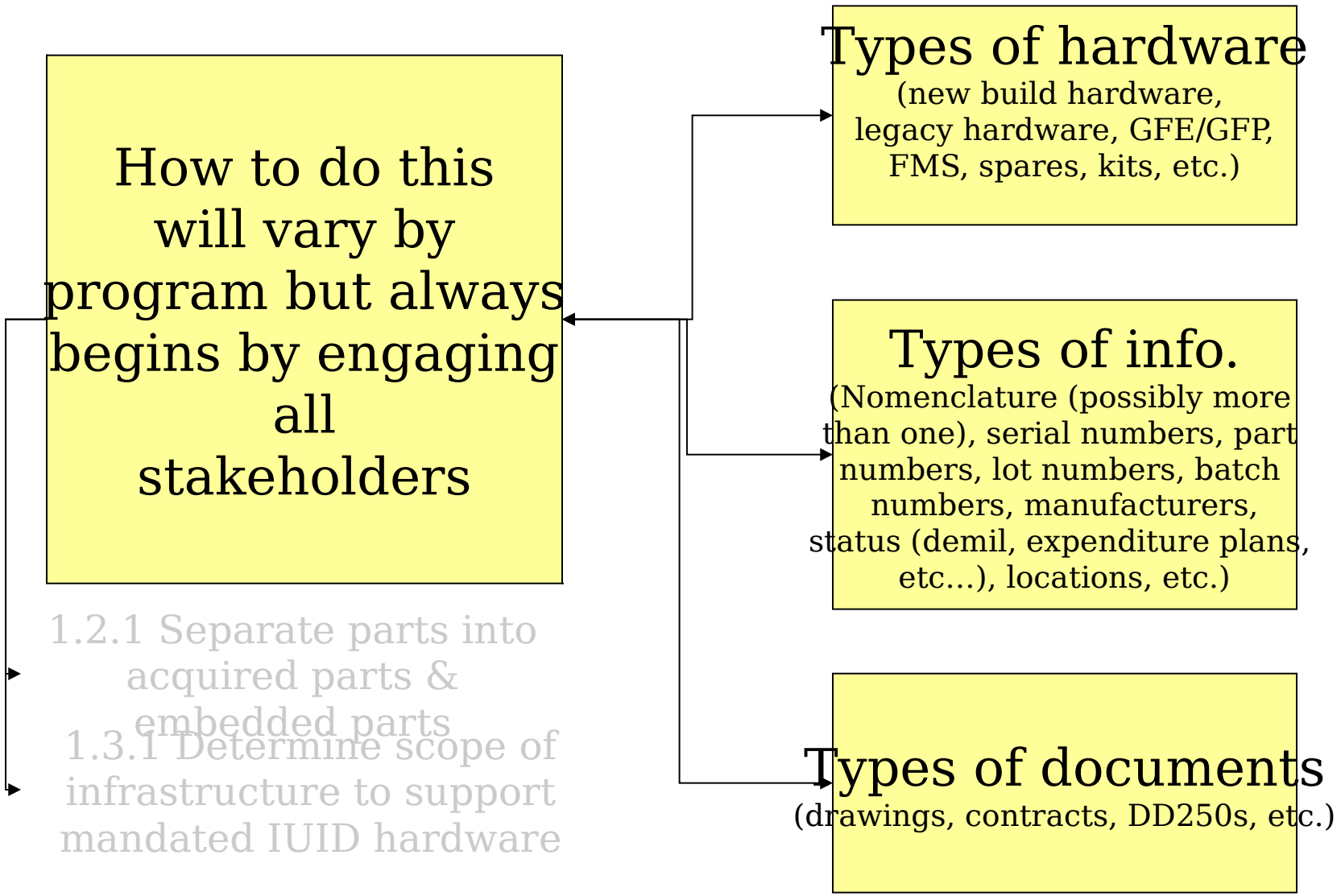
What to Mark

How to Mark

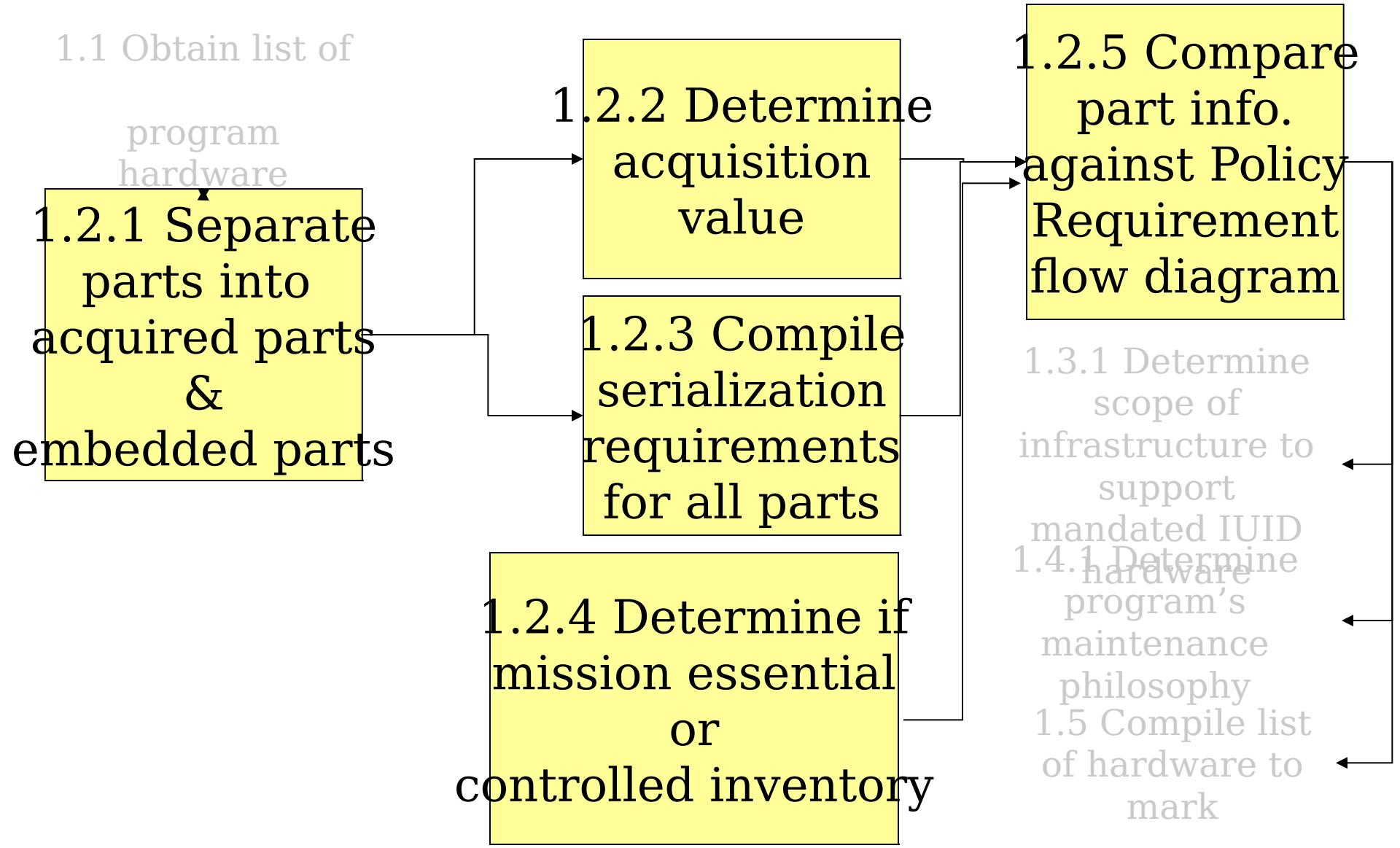
Capturing the *Data*

Sharing the Data

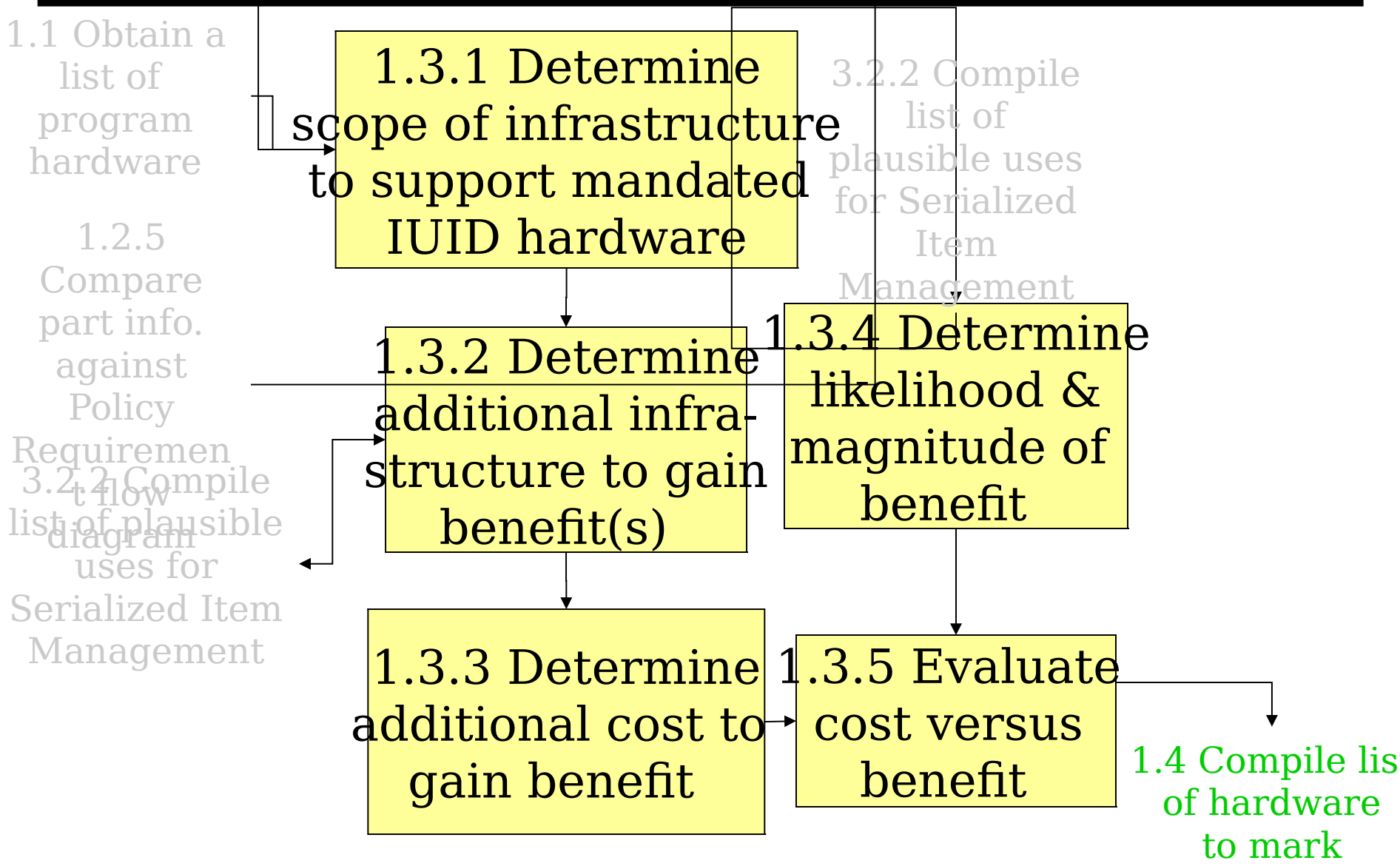
Step One (a): Listing the Program Hardware


How to do this will vary by program but always begins by engaging all stakeholders
Types of hardware
(new build hardware, legacy hardware, GFE/GFP, FMS, spares, kits, etc.)
Types of info.
(Nomenclature (possibly more than one), serial numbers, part numbers, lot numbers, batch numbers, manufacturers, status (demil, expenditure plans, etc…), locations, etc.)
Types of documents
(drawings, contracts, DD250s, etc.)
1.2.1 Separate parts into acquired parts & embedded parts
1.3.1 Determine scope of infrastructure to support mandated IUID hardware

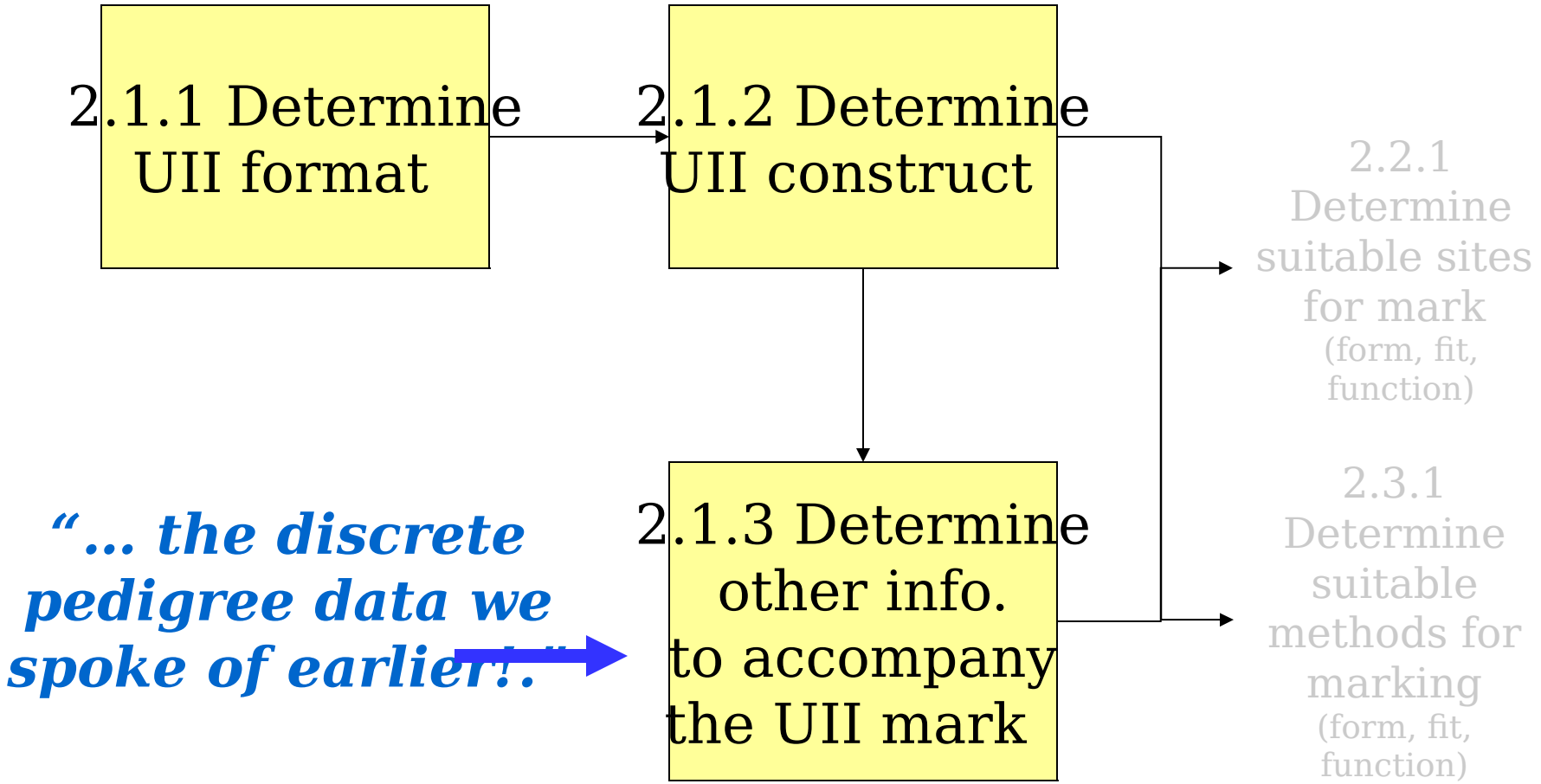
Step One (b): To Mark or not to Mark


1.1 Obtain list of
program
hardware
1.2.1 Separate parts into acquired parts & embedded parts
1.2.2 Determine acquisition value
1.2.3 Compile serialization requirements for all parts
1.2.4 Determine if mission essential or controlled inventory
1.2.5 Compare part info. against Policy Requirement flow diagram
1.3.1 Determine scope of infrastructure to support mandated IUID
1.4.1 Determine hardware program's maintenance philosophy
1.5 Compile list of hardware to mark

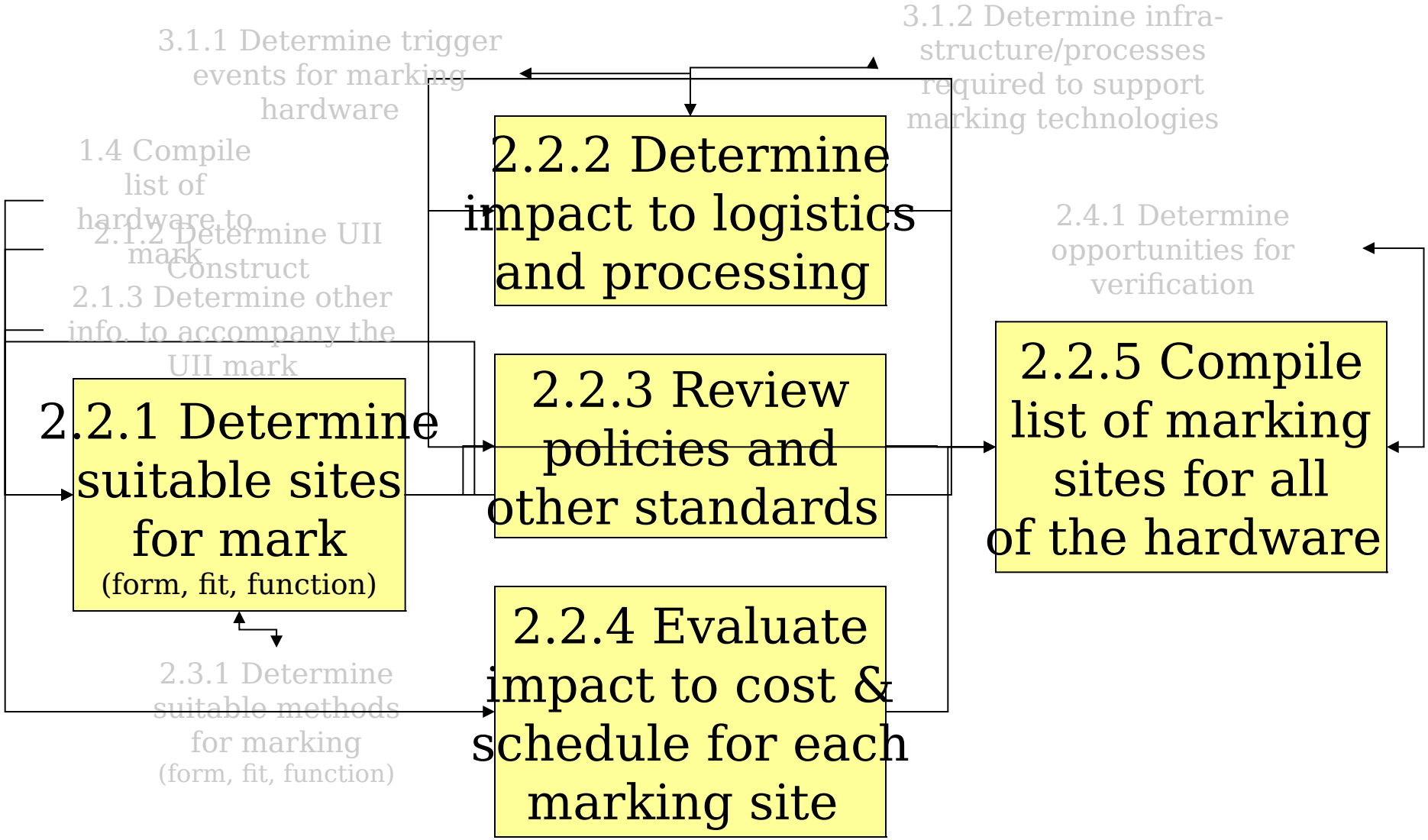
Step One (c): Is there an ROI?


1.1 Obtain a list of program hardware
1.2.5 Compare part info. against Policy Requiremen
3.2.2 Compile list of plausible uses for Serialized Item Management
t flow diagram
1.3.1 Determine scope of infrastructure to support mandated IUID hardware
3.2.2 Compile list of plausible uses for Serialized Item Management
1.3.2 Determine additional infra-structure to gain benefit(s)
1.3.4 Determine likelihood & magnitude of benefit
1.3.3 Determine additional cost to gain benefit
1.3.5 Evaluate cost versus benefit
1.4 Compile lis of hardware to mark

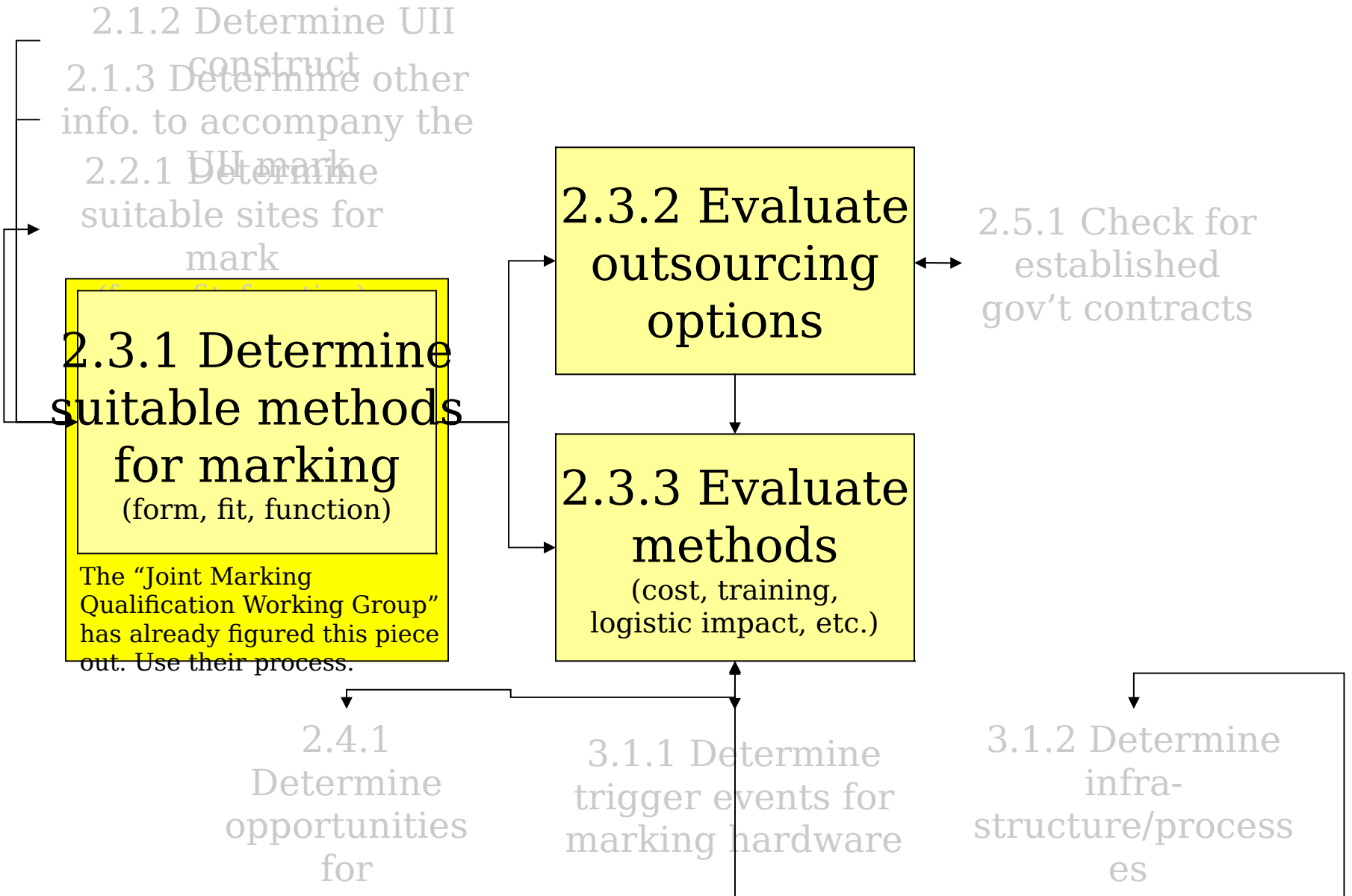
Step Two (a): Defining the Mark


2.1.1 Determine UII format
2.1.2 Determine UII construct
2.2.1 Determine suitable sites for mark (form, fit, function)
2.1.3 Determine other info. to accompany the UII mark
2.3.1 Determine suitable methods for marking (form, fit, function)
"... the discrete pedigree data we spoke of earlier!."

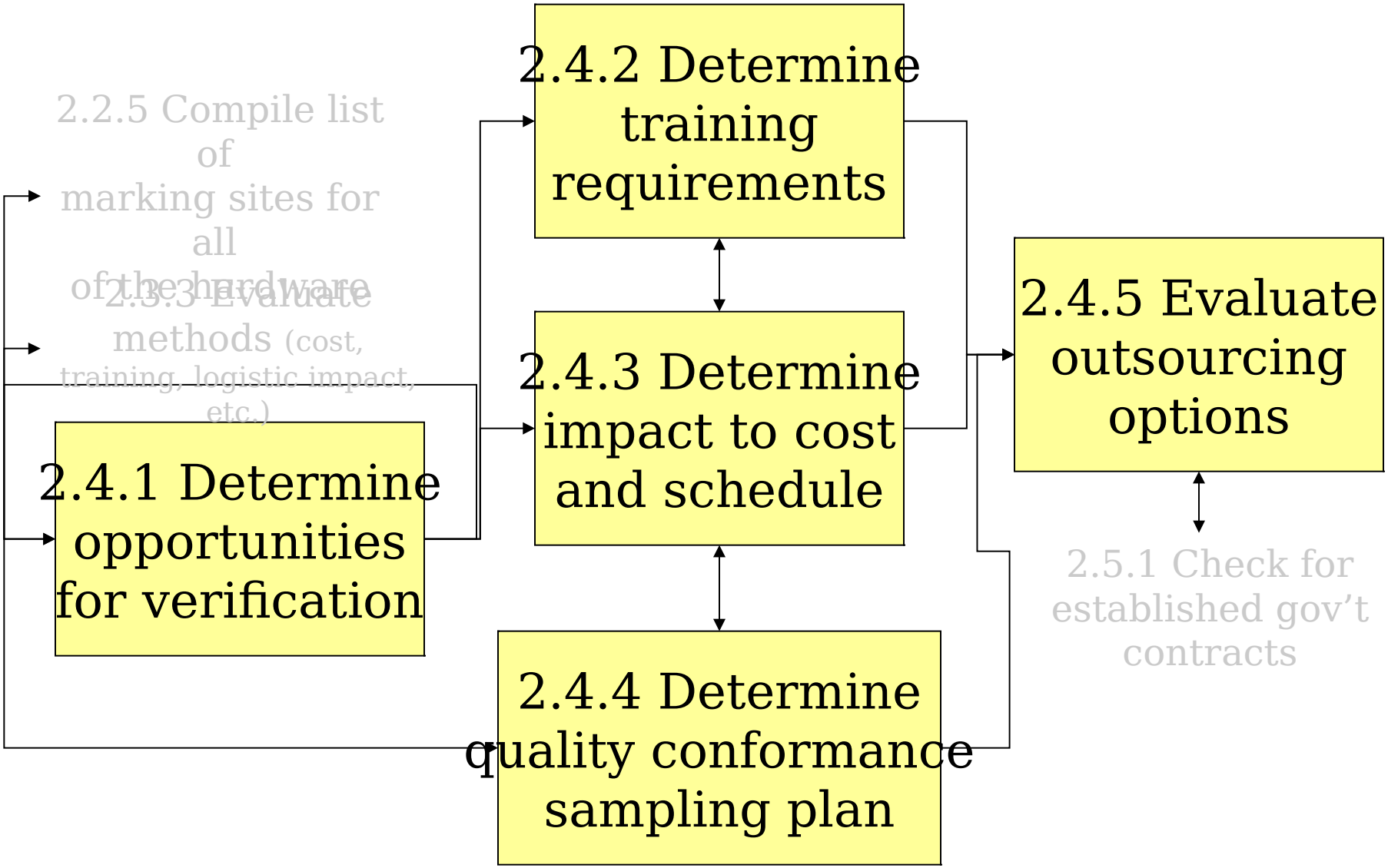
Step Two (b): Placing the Mark


3.1.1 Determine trigger events for marking hardware
3.1.2 Determine infra-structure/processes required to support marking technologies
1.4 Compile list of hardware to mark
2.1.2 Determine UII Construct
2.1.3 Determine other info. to accompany the UII mark
2.4.1 Determine opportunities for verification
2.2.2 Determine impact to logistics and processing
2.2.1 Determine suitable sites for mark (form, fit, function)
2.2.3 Review policies and other standards
2.2.5 Compile list of marking sites for all of the hardware
2.3.1 Determine suitable methods for marking (form, fit, function)
2.2.4 Evaluate impact to cost & schedule for each marking site

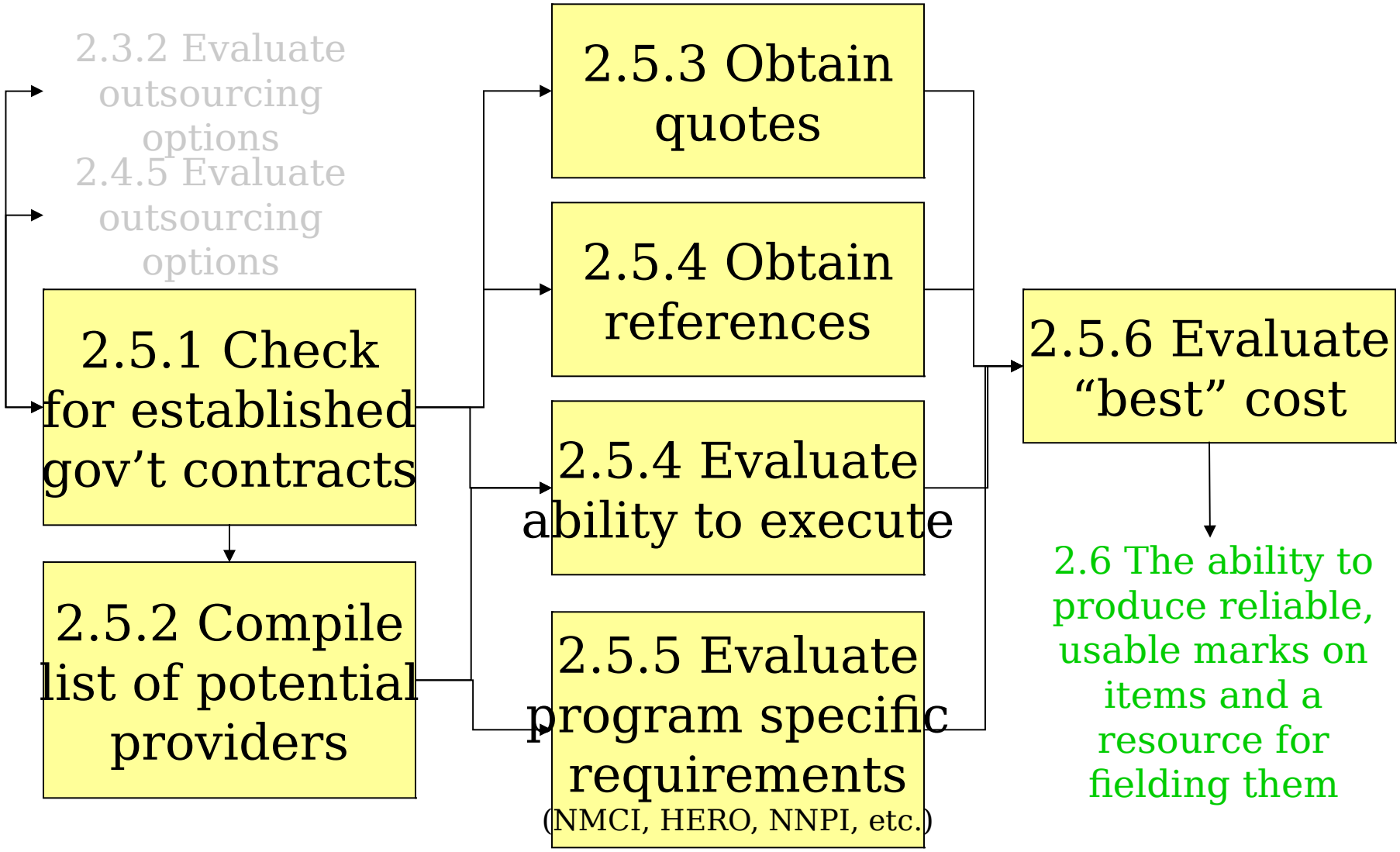
Step Two (c): Making the Mark


2.1.2 Determine UII construct
2.1.3 Determine other info. to accompany the UII mark
2.2.1 Determine suitable sites for mark
2.3.1 Determine suitable methods for marking
(form, fit, function)
The "Joint Marking Qualification Working Group" has already figured this piece out. Use their process.
2.3.2 Evaluate outsourcing options
2.5.1 Check for established gov't contracts
2.3.3 Evaluate methods
(cost, training, logistic impact, etc.)
2.4.1 Determine opportunities for
3.1.1 Determine trigger events for marking hardware
3.1.2 Determine infra-structure/process es

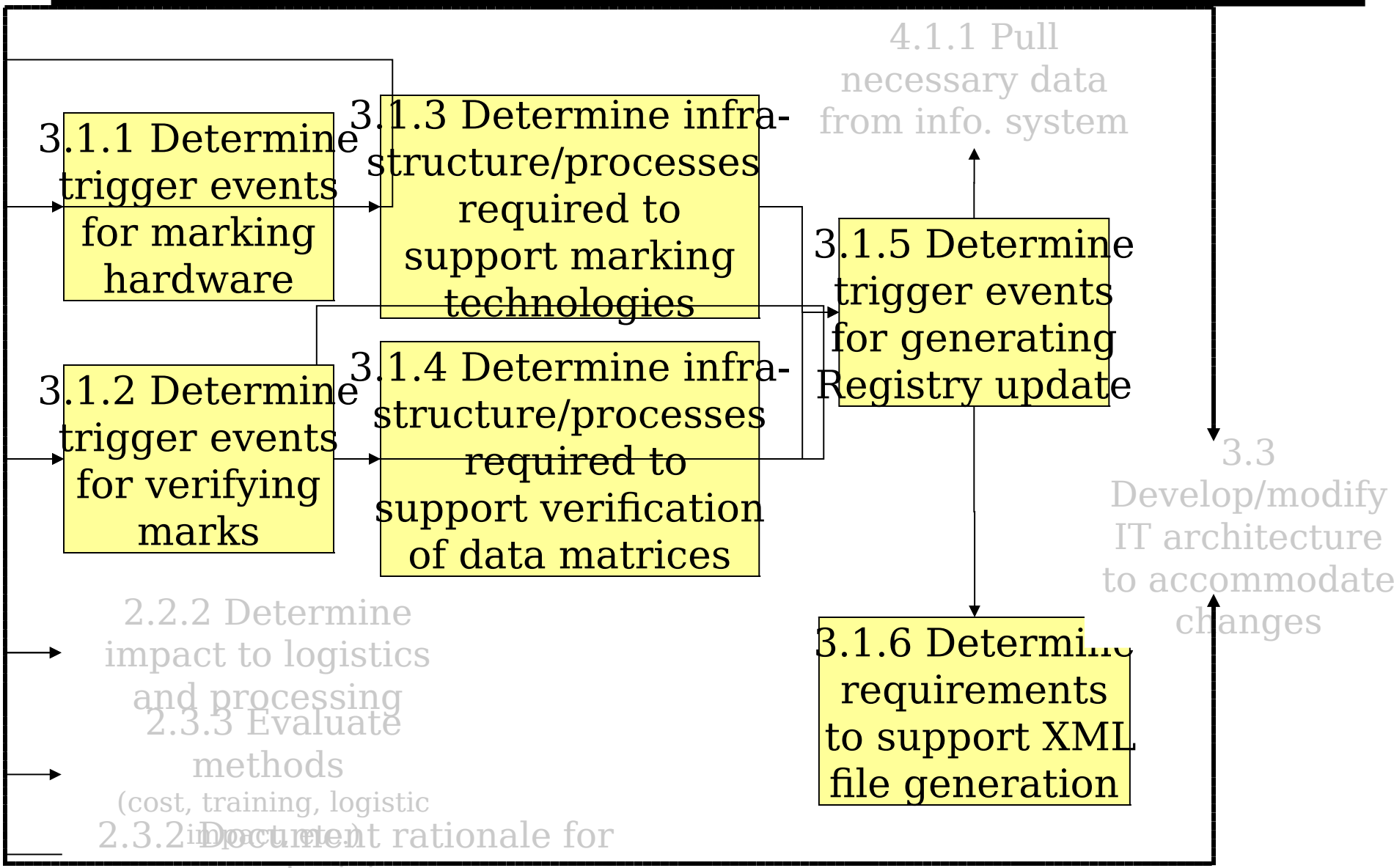
Step Two (d): Verifying the Mark


2.2.5 Compile list of marking sites for all of the hardware
2.3.3 Evaluate methods (cost, training, logistic impact, etc.)
2.4.1 Determine opportunities for verification
2.4.2 Determine training requirements
2.4.3 Determine impact to cost and schedule
2.4.4 Determine quality conformance sampling plan
2.4.5 Evaluate outsourcing options
2.5.1 Check for established gov't contracts

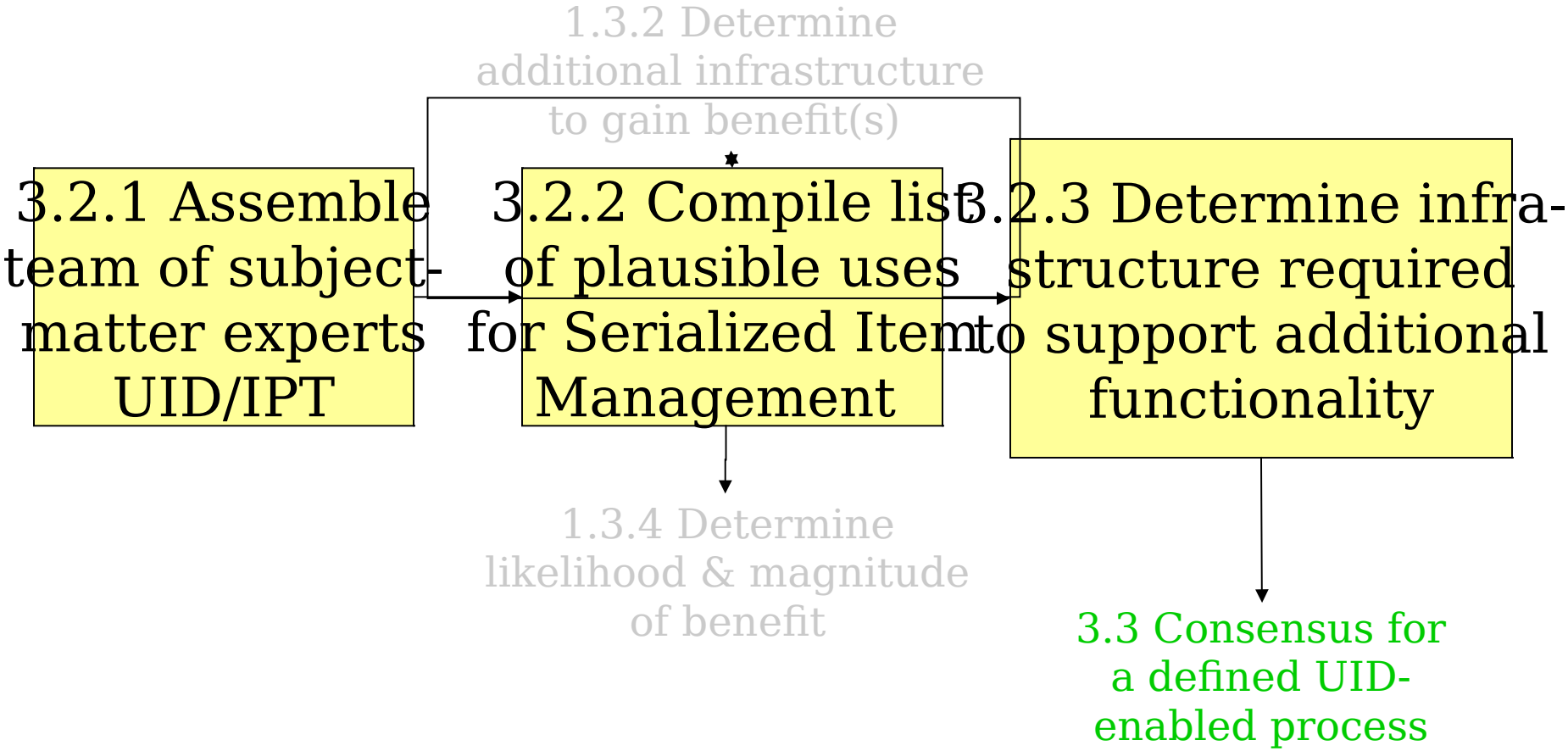
Step Two (e): Fielding the Marks


2.3.2 Evaluate outsourcing options
2.4.5 Evaluate outsourcing options
2.5.1 Check for established gov't contracts
2.5.2 Compile list of potential providers
2.5.3 Obtain quotes
2.5.4 Obtain references
2.5.4 Evaluate ability to execute
2.5.5 Evaluate program specific requirements
(NMCI, HERO, NNPI, etc.)
2.5.6 Evaluate "best" cost
2.6 The ability to produce reliable, usable marks on items and a resource for fielding them

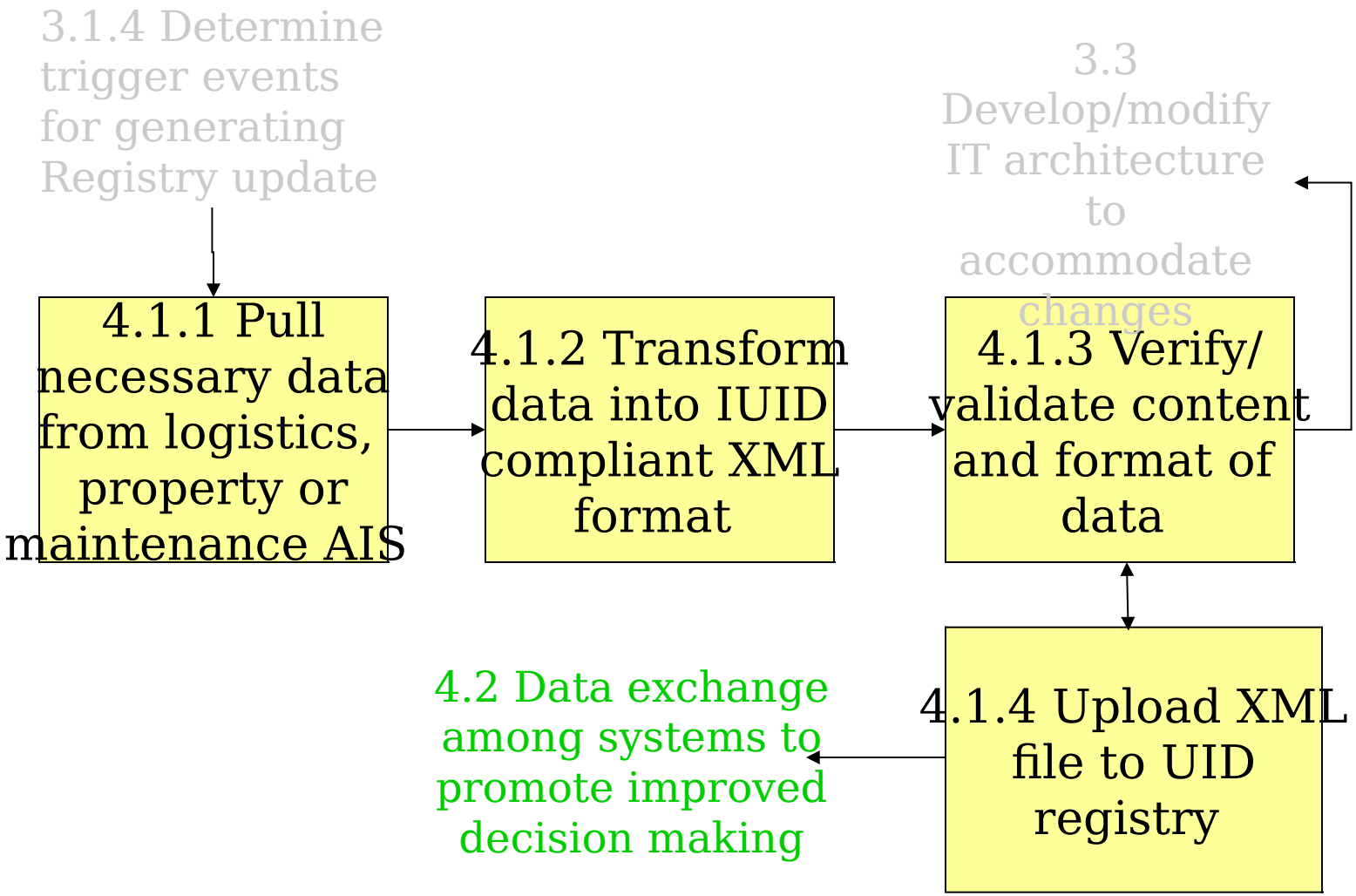
Step Three (a): Capturing the Data


4.1.1 Pull necessary data from info. system
3.1.1 Determine trigger events for marking hardware
3.1.3 Determine infra-structure/processes required to support marking technologies
3.1.5 Determine trigger events for generating Registry update
3.1.2 Determine trigger events for verifying marks
3.1.4 Determine infra-structure/processes required to support verification of data matrices
3.3 Develop/modify IT architecture to accommodate changes
2.2.2 Determine impact to logistics and processing
3.1.6 Determine requirements to support XML file generation
2.3.3 Evaluate methods
(cost, training, logistic impacts, etc.)
2.3.2 Document rationale for decisions

Step Three (b): Process Improvement with a Mark


1.3.2 Determine additional infrastructure to gain benefit(s)
3.2.1 Assemble team of subject-matter experts UID/IPT
3.2.2 Compile list of plausible uses for Serialized Item Management
3.2.3 Determine infra-structure required to support additional functionality
1.3.4 Determine likelihood & magnitude of benefit
3.3 Consensus for a defined UID-enabled process

Step Four: Sharing the Data


3.1.4 Determine trigger events for generating Registry update
3.3 Develop/modify IT architecture to accommodate changes
4.1.1 Pull necessary data from logistics, property or maintenance AIS
4.1.2 Transform data into IUID compliant XML format
4.1.3 Verify/ validate content and format of data
4.1.4 Upload XML file to UID registry
4.2 Data exchange among systems to promote improved decision making

A NAVAIR Progress Report

… where we're at right now

- Several core approaches to UID within the NAE
  - Capitalizing on a "use-it-now-with-legacy-systems" approach.
  - Emphasis on nameplates for UID marking.
  - Assisting the depots in establishing their marking capability.
  - Program-level ILAs for AIT at milestone reviews.
  - Coordinating a NAE-based SIM plan with DASN. (AT&L)
  - Active engagement with N-ERP and SAP for UID.

Working with the FRCs

… posturing the depots to mark your parts

- Established an initial marking capability at FRC Cherry Point to produce nameplates with a UID for Honeywell APUs
- Developed a web-based application for UID registry submission at FRC Cherry Point. Intentions are to integrate within NDMS.
- Instituted a UID marking capability at FRC Jacksonville for plant property. Currently establishing that capability for FRC Support Equipment.
- Modifying SNT software for additional scanners and interface with the UID registry.
- Working to obtain funding for advanced mobile marking carts for deployment to all FRCs in FY08/09.

Emphasis on Nameplates

… the fruit is low-hanging

- 80-85% of all naval aviation repairable items have nameplates
  - Minimal non-recurring costs
  - Class 2 ECP (doesn’t affect form, fit or funtion)
  - No testing for impact to the item
  - MIL-STD-130 is a well documented standard for nameplates
  - Replacement is generally done during rework anyway
- Start with nameplates now and defer the difficult direct part marking issues to later.

Integrated Logistics Assessments

… formal reviews are in progress

- The ILA Handbook was revised to include AIT as a critical element for milestone review consideration.
- ILAs are for new acquisition programs so this may or may not impact legacy UID efforts.
- Since October 2006, fifteen programs have been reviewed. Some problems are common.
  - UID plans, once written, aren't updated.
  - Metrics collection is minimal.
  - Need to shift from planning to implementation mindset

Other Related Activities

… posturing for UID in the future

- Participating with OSD on SIM planning for the Services. This will be the CONOPS and model for maintenance which relies on a UID foundation.
- Conducted engineering evaluations to modify laser printers on-hand for dual purpose of both metal and vinyl UID nameplates/labels.
- Virtually registered all aircraft in the UID registry. This is one of the few instances where virtual is endorsed. NAE policy is to not consider virtual registrations for components.
- Upgrading SNT software for UID use with other commercial scanners for “O” and “I” level maintenance.

Discussion or Questions?

AIR 6.8.3 is here to assist with UID policy guidance, implementation strategy, planning, hardware selection, quality assurance and referrals.

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